an element of the ENVIRONMENTAL PLAN

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INTRODUCTION

> "Conservation. . .can be defined as the wise use of our natural environment: it is, in the final analysis, the highest form of national thrift - the prevention of waste and despoilment while preserving, improving and renewing the quality and usefulness of all our resources."
>
> President John F. Kennedy
> Conservation Message to Congress, 1962

The wave of public concern over environmental matters which is stirring everyone from housewives to businessmen to industrialists is occurring none too soon. Many would agree that America's major city centers, east and west, are in an advanced state of decadence. In addition, there are signs that the technological disrepair that afflicts the cities is advancing toward the vast open hinderlands of America, areas so huge that few could imagine them spoiled. In between the cities and the vast interior lie the sprawling suburban communities which represent the best hope of the average middle class working American that his labors have earned him a piece of land and a home of his own.

Many suburban residents are commuters who retrace an historic pattern; the trip from suburb to city and back again. This daily trip can be compared with the exodus from the country and a land-based life to the allure of the city which occurred during the 18th and 19th centuries. Now, the return to the land is enacted in his flight from the city to the suburbs, giving evidence that man's deeply felt relation with the land is still alive, that "an ancient memory insists upon a return to the land, as contrast, into a world of non-human creatures and things."*

Only recently has the suburban residential homeowner begun to question the concept of his dream home as the same urge continues to bring more and more people who want to realize a similar dream. That land which was once open and inviting is now rapidly being occupied to capacity. Where is the vanished dream of open space and an amenable living environment?

Cities and counties have in the past played a part in the degradation or disappearance of vast amounts of open space by placing primary importance on growth and development with little conciousness of the long range environmental mischief such development could cause. Within the past few years, however, government and citizens have grown concerned with the problems generated in the ecosystem as a whole when planning neglects the comprehensive environmental approach.

* Ian L. McHarg, Design with Nature, p. 103.

On the municipal level, the City of Pleasant Hill has shown concern for the high quality of its suburban environment. All plans for development receive a thorough review before approval, including evaluation of the site plan, grading proposals, size, number and architectural character of buildings and effectiveness of the development within the existing community fabric. Developers are counseled to provide sufficient open space within a project for the use of its future residents and to assure that the natural characteristics of the site are not diminished. Dedication of park land is required to deflect the extra burden of additional users to new park sites. Environmental Impact Statements, mirroring State-promulgated guidelines, must examine a new development's effects on the environment, especially any adverse effects which cannot be avoided, the relationship between local short-term uses of man's environment and the long range protection of its quality. Any irreversible changes must be mitigated by measures which minimize the impact of the proposed development.

The vital interrelationship of man's environment and the quality of living was recognized by the Federal Government in 1968 by the creation of the Federal Environmental Protection Agency and the enactment of the National Environmental Policy Act. The Act requires a detailed report from all federal agencies on proposed legislation and other actions which significantly affect the quality of the human environment. The report must include statements of the probable impact on the environment, adverse effects, including long-term effects, and possible alternative actions.

The California Legislature has expressed its concern for the environment by the Amendment of the Local Planning Chapter of the Government Code to require that all General Plans contain an "Open Space Element", "Conservation Element", "Seismic Safety Element", "Scenic Highway Element", and a "Noise Element". In the enactment of these provisions, the Legislature has declared that the preservation of open space land and conservation of the environment is necessary, not only for the maintenance of the State's economy, but for the continued livability of the land. It was also recognized within the Act that open space and natural resources are limited and valuable assets which must be conserved for future generations. Furthermore, the requirement for a Seismic Safety Element recognized that localities must identify and appraise the potential hazard to areas subject to seismic movement.

This is then the document that the City of Pleasant Hill is preparing, an Environmental Plan which draws together all the necessary elements as required by State Law into a comprehensive unit. The Open Space Element is the first part of that Plan.

ENVIRONMENTAL ELEMENTS OF THE GENERAL PLAN

In 1970 the Legislature of the State of California enacted into law amendments to the Planning and Zoning laws which made mandatory for the first time the inclusion of these elements in the General Plan of all cities and counties: Open Space, Conservation, Seismic Safety, Noise and Scenic Highways. Although this document treats only the first element, Open Space, eventually the other four will be drafted to round out a comprehensive Environmental Plan, inclusive of all five. Below are outlined the major features of each element:

1. Open Space Element, Section 65302 (e), Government Code.
   This section requires that each city and county prepare and adopt a plan for the comprehensive and long-range preservation and conservation of open space land within its jurisdiction. The intent of this plan is to recognize that open space land is a limited and valuable resource which must be conserved wherever possible; that preservation is necessary for the continued availability of land for production of crops, for the enjoyment of scenic beauty and for the use of natural resources; and that it is a matter of public concern that unnecessary conversion of open space land to urban uses be controlled and guided to provide for an orderly growth and development of all areas within the state.

2. Conservation Element, Section 65303 (d), Government Code.
   The plan for conservation is designed to provide a guide for the conservation, development and utilization of natural resources within a government's planning area. The natural resources included within this element are water and its hydraulic force, wooded areas, soils, rivers, and other waters, harbors, fisheries, wildlife, minerals and other natural resources. Portions of the plan, including waters, shall be developed in coordination with the water agencies which have a concern within the planning area. In addition, the plan may include provision for reclamation of land and water, flood control, preservation and control of pollution of watercourses; regulate the use of land in stream channels and other areas required for the accomplishment of the plan; preserve, control, and correct the erosion of soils, beaches, and shores; protect watersheds; control the location, quantity, and quality of the rock, sand, and gravel resources.

3. Seismic Safety Element, Section 65302 (f), Government Code.
   This element consists of an identification and appraisal of seismic hazards such as susceptibility to surface ruptures from faulting, to ground shaking, to ground failures, or to effects of seismically induced waves such as tsunamis and seiches.

4. Noise Element, Section 65302 (g), Government Code.
   This element is to contain quantitative measurement of noise level and contours of present and projected noise levels associated with all existing and proposed major transportation elements. Conclusions regarding appropriate site or route selection alternatives or noise impact upon compatible land uses shall be included as a portion of the element.

5. Scenic Element, Section 65302 (h), Government Code.
The intent of this element is to provide for the development, establishment and protection of scenic corridors pursuant to Article 2.5, Chapter 2, Division 1, Streets and Highways Code, State Scenic Highways. Standards for the scenic corridor include, but are not limited to: 1) regulation of land use and intensity of development within the corridor, 2) detailed land and site planning in the corridor, 3) control of outdoor advertising, 4) careful attention to and control of earthmoving and landscaping, and 5) the design and appearance of structures and equipment located within the established scenic corridor.

ENVIRONMENTAL GOALS

For retention, preservation and enhancement of the natural assets of the area, the following goals and policies are set forth to guide and direct the planning activities and programs for the planning area of Pleasant Hill. These goals and policies are by nature general, but the enactment of the follow-up legislative program will provide specific provisions for enforcement of them.

Environmental Goals:

1. To embark upon a continuing study of the natural processes which guide and ultimately govern man's life in the community of Pleasant Hill and its area of influence; particularly emphasizing past land use and development decisions on these natural processes and the lessons to be learned from them; fitting the small city unit of Pleasant Hill and its natural ambience into the larger scale of environmental factors which influence the entire San Francisco Bay Region;

2. To recognize the basic land forms, vegetation groups and watercourses which are a part of the visually identifiable frame-of-reference which gives a Pleasant Hill resident his particular sense-of-place, a kind of recognition of his community as a unique environs;

3. To acknowledge that the physical and psychological well being of the residents of the community depends in large measure upon the appropriate fit of man to his habitat, and the link he must maintain to other life forms and natural processes;

4. To discern what appropriate amount of growth may be called "progress", yet what irreversible excess and waste may occur if the city grows without respect for the natural "carrying capacity" of the land, its ability to absorb new uses and new man-made structures;

5. To discover the natural hazards inherent in certain types of land, water and air resources which impose limits on the intrusion of man-made structures and may preclude any disturbance of these features.

6. To develop guidelines for community design which reflect an understanding of the amenities of the natural land, water and vegetation forms so that man-made structures may complement and enhance the total landscape, rather than deface it;

7. To conserve the natural resources of the area and to enhance the natural environment by restoration, reforestation and soil conservation;

8. To preserve natural wildlife habitats, watershed areas, and natural resource land.

OBJECTIVES

1. Review and revision of the Hillside Development Policy to provide more rigid controls and performance standards, and the inclusion of ridge line control provisions.

2. Development of an urban growth policy setting forth direction for the guidance of urban expansion into the open space within the planning area, while providing the greatest preservation of permanent open space.

3. Identification of areas of physical hazard such as seismic faults, unstable soils or geology, difficult topography, hydrologic limitations or other conditions which severely constrain development of such land or preclude development altogether.

4. Recommend preparation of environmental impact statements by developers of land whose projects may significantly alter the natural processes and affect the quality of life in the community.

5. Establishment of a priority list of desirable lands which should be acquired for park and recreational facilities and for permanent open space.

RECOMMENDATIONS

A. It is recommended that the following be adopted as policy guidelines for the requirement for park and recreational uses and for open space within the planning area:

   1. Five acres per thousand population for park and recreational purposes.

   2. Fifteen acres devoted to open space which sets aside significant landforms, natural plant-covered or landscaped areas along designated scenic routes, and areas of unusual vegetation and wildlife habitat, or other natural process land, per thousand population.

B. It is recommended that the city adopt a timetable policy for the acquisition of open space as set forth in this report. The timetable phases rest upon a set of priority guidelines for the preservation and retention of existing open space land.

C. It is recommended that the park dedication ordinance be coordinated with the open space plan so that areas designated for park and recreational purposes may be acquired to fulfill the guideline policy established.

D. It is recognized that the City and the Recreation and Park District cooperate in purchase and development of park land. But for the fullest utilization of funds available to each jurisdiction it is recommended that closer ties be created, such as in the formation of a Conferee Committee with representatives from each.

E. It is suggested that the newly formed Open Space Financing Advisory Committee be responsible for review of all methods, including some of the more innovative outlined in this report, and recommend those which would be most useful to the city. Several of these have never been pursued and would require extensive legal investigation or amendment to State law.

F. It is recommended that the City of Pleasant Hill set the goal of approximately 1,000 acres of park and recreation area and open space land. This recommendation is based upon a ratio of five acres per 1,000 population for park and recreation and fifteen acres per 1,000 population for open space.

   It is further recommended that the park and recreation acquisitions be in areas so located as to serve the greatest number of people possible; the recommendation for acquisition of open space should be made in areas where property contains unique and irreplaceable natural resources.

OPEN SPACE

City Identity:

Open space has always been an important element in the lives of Pleasant Hill residents. Many people admit that the generally open character of the residences here, framed by rolling meadow, rounded hillsides and the Briones ridgeline, is the major reason that they moved to Pleasant Hill. The identifiable presence of such characteristic landforms, enhanced by healthy stands of native trees, shrubs and grasses and complimented by the presence of native birds and small animal wildlife has long been taken for granted as a part of the identifiable "scene" in Pleasant Hill.

Today in the Diablo Valley as a whole a large part of the agricultural land, fruit orchards and pasture is gone; its replacement is residential and commercial development served by ribbons of concrete and asphalt. Only is isolated areas do sizable open spaces remain; many of these are being held for land speculation and future development. If these areas are allowed to be totally developed, then Pleasant Hill, Contra Costa County, and the Bay Area can become another megalopolitan slurb, another Los Angeles.

A community's open space is as much an intrinsic part of its composition as are its homes, commercial buildings, schools, and public facilities. Open space is not some unlikely area that has been inadvertently left undeveloped or is too costly to develop. Open space is land which complements the developed space by providing a feeling of spaciousness, freedom and flexibility.

As the mind needs release, freedom and recreation to function efficiently and productively, so the community needs open space to find freedom, flexibility and breathing space. Just as a cluttered mind reflects disorder and untidiness, so a congested, misused and crowded land use pattern reflects a disorganized community.

WHAT DOES OPEN SPACE MEAN TO PLEASANT HILL?

In the summer of 1972 over 300 questionnaires were returned by residents of Pleasant Hill expressing their opinions of what "open space" means to them. "Open Space is where the buildings aren't" is the basic concept of most people who responded. A classic definition which clarifies the meaning of a word by describing the negative and opposite quality, "where the buildings aren't" says it all. Indeed, a very good case can be made for a strategy to obtain open space by planning where the buildings ought to be.

When asked "What does 'public open space' mean to you?" and "Which do you wish were more available in Pleasant Hill?", more questionnaire respondents answered "a wild natural area to explore" or "a place for hiking, horseback riding and bicycling". Although many also selected the more traditional view that open space is equivalent to parks and chose such answers as "a quiet place to relax," "a nearby neighborhood park" or"a play area for active sports," it seems clear that the public concept of open space has been expanded in recent years by a growing awareness that the really significant issues are those that deal with the larger and more viable units of open space: "the hills which form a backdrop to our City," "the hiking trail we need in the City to connect us with a large natural area set aside with few man-made improvements," "the acres of orchards which used to carpet our valley's rich soil."

Therefore, a good working definition of open space might be: all those land and water areas not covered by man-made structures. Some open spaces are large, some small; some have elaborate facilities and are intensively used, some are undeveloped natural land; some are in private holdings and some are public land.

With the ever increasing recognition of the vanishing of farm land, orchards, pastures, wooded hillside and other natural wilderness areas, some form of action must be taken to preserve at least a portion of those areas still left. The objective of this plan is to provide a guideline to those areas which should be preserved and suggest the best use of the land linked to a program of action for acquisition.

ANALYSIS OF OPEN SPACE

To establish a comprehensive plan for open space retention and acquisition, it is helpful to define and classify open space land. Section 65560 of the Government Code defines "open space land" as any parcel or area of land or water which is essentially unimproved and devoted to an open space use and which is designated on a local, regional or State open space plan. This section recognizes four categories of open space:

1. Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitats of fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries, coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.

2. Open space used for the managed production of resources including, but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food and fiber; areas required for recharge of ground water basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.

3. Open space for outdoor recreation including, but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.

4. Open space for public health and safety including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection and enhancement of air quality.

In addition to these, the specific case of Pleasant Hill suggests that a fifth classification will be useful:

5. Open space for shaping and guiding urban growth including land to preserve community identity and to prevent overly expansive urbanization.

PLANNING FOR OPEN SPACE

The plan has been projected to the year 1990 to meet the needs of a growing community and because of the availability of much of the land. It is anticipated that a large percentage of the designated land can be acquired since much of it is still vacant or in agricultural use. The plan calls for the creation of parks, playgrounds, linear green belts, and the retention of natural areas.

The basic element of the plan requires that the designated land be acquired by public purchase and held in perpetuity. However, there is also provision made for acquisition or retention of some areas in less than fee title. Consideration has also been given to the creation and preservation of open space by the introduction of new housing types in both new and rebuilt areas.

PLANNING REQUIREMENTS

In the development of the open space plan and the establishment of guidelines for implementation of the plan, a number of planning considerations had to be reviewed and examined to assess the impact and effectiveness of the plan. First, is the proposed use of the land for permanent open space, consistent with the adopted General Plan? Is the concept behind the open space plan based upon standards and objectives relevant to the community? Are the areas proposed for preservation identified and properly described with justification for their retention or acquisition and their ultimate use? How should we develop an adequate means of implementing the adopted program, including regulations, controls and restrictions? Last, but not least, are the areas designated for preservation and acquisition, worthy of retention?

ACTION TO PRESERVE OPEN SPACE

In the preservation and retention of open space within the planning area, three major priorities of acquisition have been established to determine the phasing of purchase: Phase I - short range needs or those lands which are needed immediately; Phase II - intermediate needs or those lands which will be needed to meet the goals of this plan in a five to ten year period; Phase III - the long range need of the city to secure the acreage needed by 1990.

> Phase I - Short range requirements include those lands which will be required within the immediate future due to the lack of present facilities within a geographical area of the community or due to imminent development proposals on lands which will be required to meet the requirements and goals of the long-range plan.
>
> Phase II - Intermediate range requirements are those areas which will be needed during the next five to ten years to meet the guideline policies as established by this plan. Included within this group are those lands which are of special scenic or recreational value which are not immediately threatened by sale or development.
>
> Phase III - Long range priority lands are those which will be needed by the year 1990 to meet the needs of open space and recreational facilities for the estimated population of 55,000 which will be within the city limits. Many areas which are proposed within this priority listing may be acquired as development takes place within these designated areas.

The city will continue to utilize the Park Land Dedication Ordinance which provides for both the incorporation of open space and recreational facilities within large scale development, and the dedication of land for public use or the payment of in-lieu fees which can be used for the purchase of additional recreational land.

IMPLEMENTATION - ACQUISITION

To effect the acquisition or retention of open space, there are a number of different means which can be employed by the city in meeting the objectives of this plan. These programs can be used either separately or combined to meet the requirements of the legislative intent.

There are two main ways to acquire land: 1) fee title and 2) less than fee title.

A. Acquisition of fee title by:

1. Payment of full purchase price.
2. Installment payments.
3. Purchase with life estate.
4. Purchase and lease back.
5. Gift to public agency.
6. Park dedication requirements.

B. Acquisition by less than fee title:

1. Development easements obtained on portions of the property.
2. Lease of property with option to purchase.
3. Scenic route designation or scenic easements.
4. Open space zoning with some form of transfer of density.

If the object is to retain the land in private ownership, without direct payment to the property owner, there are several methods:

A. Use of Williamson Act for reduction in taxes on prime agricultural land.
B. Zoning controls with respect to land slope, soil conditions and seismic safety.
C. Deferred taxation based upon present use rather than highest and best use.
D. Encouragement of developers to leave larger areas of open space by density transfers.

A number of programs would require State Legislation in order to accomplish them to the fullest extent.

FINANCING THE OPEN SPACE PLAN

Pleasant Hill has a number of alternative financing methods available for the acquisition and development of park and recreational facilities and open space land. In general terms, there are eight methods available, six of which are dependent upon the city's General Fund or property tax rate. The six methods are: pay-as-you-go, general obligation bonds, joint authority financing, non-profit corporation, levy of city property tax for acquisition, and special tax rate. The last two methods are: leasing and development and issuance of revenue bonds. Revenue bonds and lease and development are not wholly dependent upon the general fund or property tax, but neither are they suitable to support the entire funding for acquisition and/or development.

The eight alternative methods for financing the program are set forth as follows:

1. Pay-As-You-Go or Cash Financing: By this method, only those lands which can be purchased by available cash on hand can be acquired each year. This is the least costly method for the city, but is also the least practical from the standpoint of small purchases and being a drain on the general fund. The principal disadvantages of this method are: 1) delay in acquisition program, 2) no firm or long-term commitment to the total program, and 3) inadequacy for purchase of large parcels.

2. General Obligation Bond: This method is familiar to most people since it is the type of financing most generally used by government to obtain funds for any purpose which is considered of general benefit to the taxpayer. The major advantage of this type of financing is the low interest rate at which these bonds can be sold. The disadvantages are that special bond elections must be called and that if the election were to fail there is a minimum of a six month period before the measure can be put on the ballot again.

3. Joint Authority Financing: Under this financing method two or more public agencies enter into a joint powers agreement for the purpose of exercising any power common to the contracting parties. The agreement sets forth the purpose of the powers to be exercised and describes the manner by which they are to be exercised. The authority created by the joint powers agreement has the power to issue revenue bonds under Section 6546 of the Government Code, provided that the authority has the power to acquire, construct, maintain and operate exhibition buildings, sports event buildings or any other public buildings. This method of financing does not appear to be too appropriate to Pleasant Hill unless the city were to undertake an exhibition or sports complex.

4. Non-Profit Corporation: In many ways this method is similar to the joint authority; however, in this case a private non-profit corporation is formed by the city to issue bonds, acquire land and develop facilities. In this type of financing, it is generally required that land already be in public ownership with the corporation issuing bonds which are secured by a lease from the

governmental unit pledging the lease payments covering bond principal and interest. For park and open space financing, this method is of little value except for the construction of public buildings on land already in government ownership.

5. City Property Tax Levy: This method of financing has the same funding principle as the pay-as-you-go method, with the exception that the special levy is assigned only to the park and recreation and open space land acquisition and/or development fund rather than the general fund. This method has these advantages: 1) it provides a relatively large sum of money yearly; 2) cash financing can be used on a yearly basis; 3) special tax rate can be used as payback security for bond sales; 4) funds increased as assessed value within community increases; 5) commitment to the implementation of the total plan has been made; 6) property owners are relieved that the special tax is finite and will be removed as soon as the needed lands are acquired.

6. Special Tax Rate: Within this method of financing, there are a number of special districts which can be established or special taxing can be levied for park or recreational purposes or for open space maintenance. Section 50400 of the Government Code provides that a local agency may levy a yearly tax not to exceed three cents per $100 of assessed valuation of property in the local agency to maintain and improve public parks situated in the local agency. Chapter 2.5, Sections 50575 through 50628 of the Government Code allows the formation of an open space maintenance district, subject to petition and approval of the voters. If approved, the legislative body may levy an annual ad valorem special assessment not to exceed twenty-five cents per $100 assessed valuation of taxable land and improvements within the maintenance district to pay the costs of maintenance and operation of open areas.

7. Leasing and Development: This is a method whereby land can be developed after acquisition. The principle of this method is to lease public land to a private lessee for his development of the parcel, subject to governmental guidelines and adopted plans. Projects which could be covered by this method of development are: golf courses, equestrian centers, archery ranges, conference centers, service facilities, etc. Thus, the future use can be seen as income to help retire the cost of acquisition.

8. Revenue Bonds: The major feature of revenue bonds if that they are secured by direct revenue from the facility after it has been acquired, constructed or improved. In 1957 additional legislation was adopted to make golf courses, marinas and small boat harbors eligible for issuance of revenue bonds. There is no legal limitation on the dollar value of revenue bonds which any governmental body may issue; practically, the size of issue is limited to the amount which can be paid back, including interest and principal, at the rate which raises revenue no more than 1.25 to 1.50 times the annual bond service debt.

Advantages of revenue bonds are: 1) funds for repayment are derived from projects covered by bonds, 2) bonds are secured by revenue from projects so real property cannot have lien placed against it, 3) bonds may be authorized by a simple majority vote.

Disadvantages are: 1) revenues to secure repayment must be from 25 to 50 percent above payments; 2) reserve fund must be established for repayment of bond; 3) interest rate is usually higher than general obligation bonds.

INNOVATIVE METHODS OF FINANCING

In addition to the more familiar and standard methods of financing acquisition, there are a number of innovative methods of acquiring land which show some promise for future use. However, at the present time they are not recommended for use since most require changes in Federal and State Legislation.

Listed below are some of the more promising methods:

1. Exchange of Land Development Rights: The basic principle of the exchange of land development rights is to allow increased development on one parcel of land in exchange for a loss of development on another parcel, both owned by the same party. In general, this loss of development rights would form a permanent open space easement on the land. One means of implementing this method may be the newly adopted open space zoning provisions contained within Sections 65910 through 65912, Government Code of the State of California, (Article 4, Chapter 4, Zoning Regulations).

2. Use of Property Transfer Tax: In 1968 legislation was passed to allow counties and cities to impose a property transfer tax on all sales of property and/or structures. Contained within the legislation are rigid controls of expenditures as well as a limit of $1.10 per $1,000 of sale price. In 1971, the city received in excess of $16,000 from this source. If new state enabling legislation were to be enacted to increase this tax and to allow its use for park and open space acquisition, this could provide a new source of financing.

3. Special Sales Tax for Open Space: At the present time, the city receives one cent of the 5-1/2 cent sales tax levied while the state retains four cents and BART the remaining 1/2 cent. From the one penny sales tax subvention, the city received during 1971-72 in excess of $660,000. If an additional one cent was placed on the sales tax specifically designated for local government to use in acquisition of park and open space land, it can be seen that a fairly large sum would be realized by the city. The increase in the sales tax rate would require new State enabling legislation. However, similar type legislation was authorized to support BART within the three participating counties.

4. Federal Long-Term Low Interest Loans or Interest Rate Subsidies: Currently Federal participation in local park and open space acquisition is in the form of direct grants to the particular jurisdiction on approved projects. At the present time, there

is a trend to Federal programs in which annual participation is through subsidy contributions which cover a portion of the interest and principal on loans incurred by the local agency for eligible projects. Two methods which should receive further study in case of change of Department of Housing and Urban Development programs: 1) agreement whereby the Federal government acquires the bonds of a local agency at a low interest rate and extends repayment over a longer period of time, i.e. three percent loans on a 40 year term, and 2) agreement whereby the government underwrites or guarantees the interest rate between a low interest loan (3 percent) and the commercial market rate.

At the present time there are several Federal agencies carrying on programs utilizing both of these financing methods. It is conceivable that a concerted effort by local governments could lead to the adoption of this procedure by agencies allocating funds for parks and open space.

FUNDING PROGRAMS FOR OPEN SPACE AND PARKS

Currently the Association of Bay Area Governments is in the process of preparing a Phase III report, Regional Open Space Plan, Implementation Data. This report will contain an up-to-date summary of all governmental agencies which are sources of funds for open space and park acquisition. It is anticipated that this report will be issued early in 1973. With the A.B.A.G. report providing current sources and revised fund programs being issued in such a short time, this portion of the plan has been prepared only indicating those major Federal programs which could be applicable to Pleasant Hill. It is anticipated that this section on funding will be revised when the new material is received.

A. Federal Programs.

1. United States Army Corps of Engineers, San Francisco District:

District Engineer, Corps of Engineers
100 McAllister Street
San Francisco, California

a. Flood Control Act of 1962

The Flood Control Act of 1962 authorized the Chief of Engineers to construct, operate and maintain public park and recreation facilities at water resource development projects under jurisdiction of the Department of the Army and to permit such construction, operation and maintenance by local interests. The Secretary of the Army is also authorized to grant leases of lands, including structures or facilities thereon, for purposes as he deems reasonable in the public interest. Leases to non-profit organizations

for park or recreational purposes may be granted at reduced or nominal considerations and preference shall be given to Federal, State or local government agencies. In some appropriate cases, licenses or leases may be granted without monetary considerations.

2. Department of Housing and Urban Development

Regional Director
Regional Office of the Department of
Housing and Urban Development
450 Golden Gate Avenue
San Francisco, California 94102

a. Open Space Land Program

The Open Space Land Program (which is set forth in Title VII of the Housing Act of 1961) was amended in 1965 to make it even more attractive to local jurisdictions. It now allows the Federal Government to contribute to local governments up to 50 percent of the cost of acquiring land for parks, scenic areas, scenic easements, etc.

3. Department of Interior

The Administrator of the Land and Water Conservation Act of 1965 is the United States Bureau of Outdoor Recreation. This Bureau requires inquiries and applications to be handled through the State of California Resources Agency; the address is:

Administrator
California Resources Agency
Ninth and O Streets, Room 1020
Sacramento, California 95814

a. Land and Water Conservation Act

Under the Land and Water Conservation Act of 1965, Congress directed that the future revenues from park admission fees from the sale of certain surplus properties, and from taxes on motorboat fuels be placed into a "Land and Water Conservation Fund". This fund, which is expected to amount to $180,000,000 a year, is to be spent for planning, acquiring and developing recreation and conservation projects. Forty percent of the fund will be spent for Federal projects, and the remaining 60 percent will be allocated to states. Of the State share, some will be spent in State projects, and some will be allocated for County, City or special district projects. For the State and local jurisdictions this is a matching fund program; Federal assistance is limited to 50

percent of the total project cost.

Local jurisdictions must apply to the State Resources Agency for this financial assistance. The Resources Agency then reviews all projects to make sure that they meet the minimum requirements of the Federal legislation, assigns relative priorities to the projects, and submits its recommendation to the State Legislature. The State Legislature, in adopting a State Budget, determines how the money is to be distributed.

Projects to be financed under this program should be regional in significance, and primarily serve day use from urban centers of population, preferably within approximately an hour's auto travel distance from such centers. Projects should include a minimum of 50 acres or cost a minimum of $50,000, except in unusual circumstances.

This program may be used for:

. acquisition of undeveloped land
. acquisition of scenic easements and development rights
. acquisition and clearance of developed land in densely populated areas
. limited development of acquired land (such as for landscaping, sanitary facilities, etc.).

The program may NOT be used for development of major recreation facilities, such as golf courses, swimming pools, or major buildings.

The program is available to state, regional, county, city and special district governments. Prerequisities to participation in the program are that the receiving agency must be participating in the comprehensive planning of the urban area, and there must be an adequate acquisition and development program of open space in the urban area.
(Note: Participation in the Association of Bay Area Governments (ABAG), meets these prerequisites for cities in the Bay Area).

This Open Space Land Program, administered by HHFA, and the Land and Water Conservation Fund Act, administered by the Department of the Interior, are the two major sources of federal aid to local communities for park and open space acquisition. In many respects, they are very similar. An administrative distinction has been drawn, however, defining which of the two programs should be used for which type of area, stated as follows:

a. The Open Space Land Program shall be the primary means of assistance to States and local bodies for the acquisition of open space land which is located in and serves an urbanized area, such as squares, malls, playgrounds, parks, historic sites, and open space for scenic purposes.

b. The Land and Water Conservation Fund Act, in addition to its program of acquisition of national and state recreation sites, is intended for use by local governments as the primary means of assistance for the acquisition of lands for larger regional parks, historic sites, and recreational and scenic areas to serve residents of urban and other local areas.

However, lately it appears that Federal policy is changing with respect to open space grants and that in the future we may see more revenue sharing money coming to the cities. However, open space will have to compete with all the other programs a City wishes to fund from revenue sharing, since none will be directly earmarked for open space.

HOW DO WE ANALYZE THE ENVIRONMENTAL SYSTEM?

"When we try to pick out anything by itself we find
it hitched to everything else in the universe."

John Muir

In the development of the earth's surface, a number of elements has combined in both constructive and destructive manner to create the life system that we are a part of today.

We call the environmental whole in which we live an ecosystem, and it is made up of two parts: the physical setting and the biological community which invests it. These both have many components, the most important of which we will single out in this section. Some of the components of the system are resources which suggest themselves as positive opportunities which ought to be realized for the betterment of the community; others are not resources, but negative constraints which impose caution on our planning for the area in order that we avoid any accompanying hazards. An example of a positive resource which ought to be recognized as an opportunity is the varied topography, the native vegetation or fertile soil. A negative hazard, for example, is the earthquake fault zone, erosive soil or unstable soil conditions.

It is impossible to examine one component of the life system without seeing its function enmeshed with all the others. No one factor may be separately classified and examined, although for the purposes of analysis, one must first define and describe the separate parts. Understanding the influence of these elements in forming and maintaining the environment leads planners to suggest appropriate uses of the land.

1. Topography, geology and hydrology: a brief verbal and graphic description of the region with special attention to unusual topographical, geological, and water features.

2. Climate influences: special climate studies on the amount and severity of daily and seasonal rain, wind, temperature, sunshine and other climatic conditions.

3. Seismic considerations: review of the fault lines and quake zones within the region and the possible effect of development near fault zones within the planning areas.

4. Soil types: an examination of the various characteristics of the soils found within the planning area and a brief review of their suitability for various types of land use.

5. Ecology of natural vegetation and wildlife: a description of the types and distribution of vegetation and wildlife and their special ecological requirements.

6. Hazards: water hazards, landslides.

7. Public facilities: the availability and location of water supply, drainage, power lines, road access and other facilities in the planning area.

TOPOGRAPHY

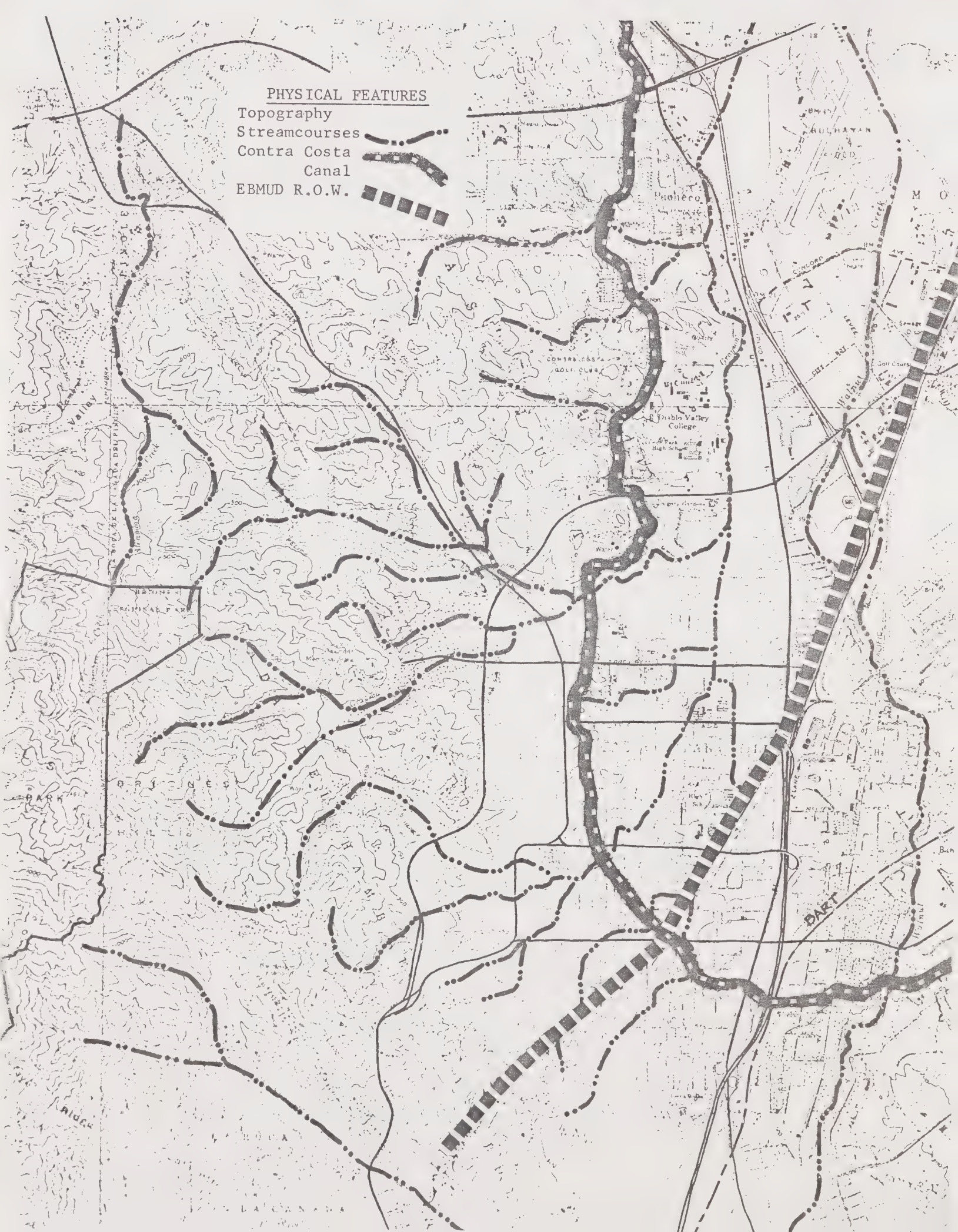
The landforms of the earth, its protuberances and its depressions, are studied under the heading of Topography. The necessity to describe this third dimension of the earth's surface on maps led to the descriptive mapping device called "contour lines". Contour lines record changes in elevation and often give the student of geography an understanding of the causes of physical change the earth has undergone in its development.

Such landforms as mountain ridges, knolls, valleys, ravines, etc., can be read from topographic maps of the Pleasant Hill planning area. But the most significant way that the lay person "reads" the landscape is not on a map, but on foot, standing on a hill prominence to get a better view of the landforms and their man-made alterations, or from his automobile moving through space and enjoying the kinesthetic sense of a ridge dissolving into a plain, or a series of knolls and saddles leading up to a group of peaks with the ravines caused by water cutting troughs down their flanks.

It is in this way that a person recognizes where he is and where he has been, by natural landmarks and the activity of moving from place to place, taking his bearings from them.

Much of the identification with his city, as his home, is due to the recognition by a person, sometimes only subconciously, of the major landforms that he sees from his backdoor or from a moving vehicle.

In the Pleasant Hill area the major landforms are the Briones foothills, the ridgeline of peaks in Briones Regional Park which form the skyline horizon, the ravines which mark old watercourses, the narrow valleys between prominences, the floodplain upon which many of the settled areas lie, and the soaring presence of Mt. Diablo across the valley.


PHYSICAL FEATURES
Topography
Streamcourses
Contra Costa Canal
EBMUD R.O.W.
Pacheco
Mt. Diablo Valley College
BART

GEOLOGY

Many sorts of materials make up the earth's crust which underlies Pleasant Hill. The geologist is assisted in his examination of the area, ironically enough, by the inroads which man has made: the highway cuts or the exposure of rock faces when the soil is moved to construct a building. Upthrusts in the strata of rock reveal ancient movements of the subsurface system while dips downward are the valleys formed when these layers of rock are crushed against adjacent layers.

The study of geomorphology directs us toward the origin and nature of the land forms around the community of Pleasant Hill. For example, the presence of "unconsolidated sediments" (gravel, sand, silt, clay and peat) that underlie the broad plain of the Diablo Valley, reveal an ancient river whose normal course and also periodic flooding deposited great quantities of alluvium, a rich base for later agriculture. As the river receded, it etched a more confined course and left behind banks called terraces. These non-marine deposited terraces were later eroded and rounded into the low hills which ring the valley.

Many low lying areas have today been drained to accommodate urban uses, but these silt and clay deposits still pose a threat if they subside (the surface can collapse if subsurface materials such as water are pumped out) or settle differentially, or fail by shearing, or shrink or crack when dry, or expand and become plastic when wet.

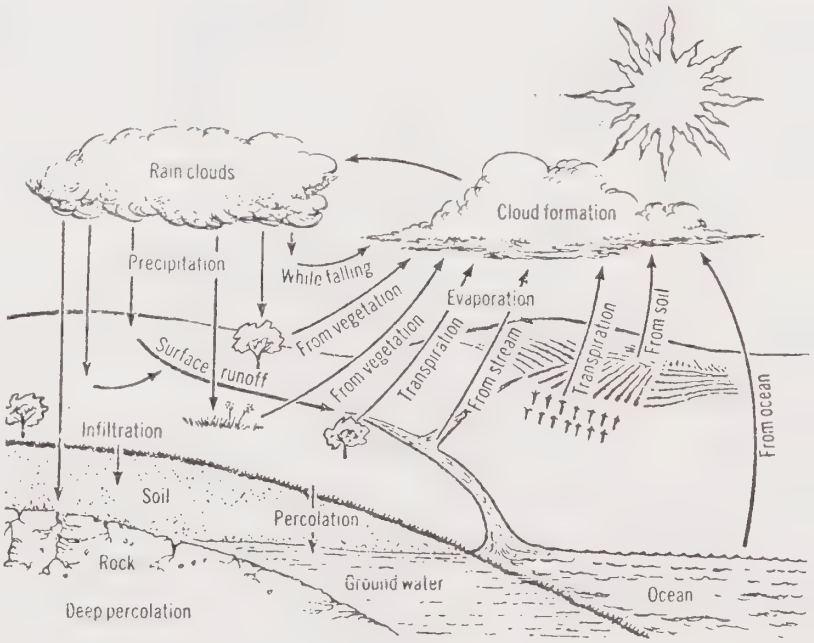
The Briones Hills and foothills to the west of Pleasant Hill are composed also of sedimentary rocks, but these are moderately well or well consolidated. Sandstone, shale, siltstone, conglomerate and limestone are the chief components. Older rocks are generally well compacted, but most of the potential area of future development past Pleasant Hill's present western city limits is composed of shale, claystone and poorly cemented sandstone which may slump on slopes steeper than 30 percent. Some clay beds swell greatly and become plastic and weak when wet, and shrink and crack severely when dry.

HYDROLOGY

Such resources as water and air, vegetation and wildlife can be considered "renewable" if lost partially and temporarily, because they are subject to cycles which restore them when they appear to be depleted. For example, although fresh water is exhaustible at a given place and time due to poor management, it will be renewed sooner or later by the "giant natural still" of the hydrologic (water) cycle.

In Pleasant Hill, the water cycle works in minature of the entire region. Winter rain water is shed down the east-facing slopes of the Briones Foothills and channeled into the Grayson and Walnut Creeks; in former days, the low-lying floodplain with its high water table acted as a sponge until the flood limit was reached. However, today sudden rainwater run-off is carried through the storm drainage system to the channels installed by the Flood Control District in lower Grayson and Walnut Creek. Natural water run-off occurs in unaltered channels only in the upper streamcourses which feed Grayson Creek. This run-off is intermittent and not of sufficient volume to cause concern. The urbanization of the floodplain which has occurred in the past 30 years makes it almost impossible to recover the natural action of the floodplain as it once functioned.

Even within the Pleasant Hill planning area, the amount of rainfall varies considerably, from as little as 12.5 inches to as many as 22.5 inches in seasonal isohyets. Of course, greater rainfall occurs in these hillside areas while much of the rainfall destined for the flat floodplain area is intercepted by the atmosphere and does not reach the ground, except later as storm run-off.



The Hydrological Cycle

In developed areas where much of the land is paved or covered, rain water runs off roof tops, driveways, roads and parking lots much faster, carrying many more impurities than on unpaved land. It is easy to see how abuses of water quality can enter the hydrological system: for example, certain long-life chemicals used as pesticides in agriculture and also home gardening can build up in bodies of water and be returned continuously through the system.

There is a need for total ground and surface water management in order to:

1. reverse the cycle of groundwater depletion and quality degradation;

2. properly allocate surface waters;

3. preserve ground water recharge areas;

4. regulate the disposition of drainage water, especially from streets, parking lots and other areas where surface water runoff may be tainted with impurities;

5. provide for waste water reclamation.

In addition, it is imperative to preserve the character of those streamcourses which do today remain in their natural channels, rich in the vegetation which thrives in such nourishing areas, and in some cases to provide public access in the form of biking and riding trails and pedestrian walkways. Instruction in the basic life processes that are taking place in the creek environment, and the designation of particularly worthy sections as nature-study areas, can muster public support to the intrinsic value of the natural stream as an irreplaceable resource and visual amenity.

CLIMATE

Locally in Pleasant Hill, climate is affected by:

1.	the Pacific Ocean which provides:	moist air all seasons mild winters, cool summers rainfall limited to fall-winter-spring
2.	the continental air mass which provides:	drier air all seasons colder winters, hotter summers precipitation at any time of the year
3.	the topography:	mountains and hills which determine whether areas beyond them will be influenced primarily by marine air or by continental air, or, as in Pleasant Hill, some of each

The position of Pleasant Hill to leeward side of the Coast Range means that the range lessens the marine influence from the air as it passes west-to-east. Likewise the Coast Range tends to trap the hot, dry continental air mass as it passes from east to west.

Thus most of Pleasant Hill receives the moderating influence of marine air which slips through gaps in the Costal Range moderating the warmer, drier continental air. Without this moderating effect of marine air, the inland area would experience colder winters and hotter summers.

The principal opening in the Coastal Range through which a persistent and fairly strong flow of cool marine air flows is the Carquinez Strait. Some of this cool air is deflected south through the central Diablo Valley, providing a natural air conditioning system to the Pleasant Hill area. The periodic heat of mid-summer which sometimes escalates temperatures into the 100s is usually relieved after several days by an inflow of cool marine air from the Carquinez Strait or by a layer of fog propelled over the Coastal Range (Berkeley Hills) en route eastward from the Golden Gate.

Average daytime temperatures in mid-summer are 87^{o} cooling to 54^{o} at night. Winters are moderately cool: average minimum temperature for January is 35^{o} but afternoon readings average a comfortable 55^{o}.

The rainy season in winter is paralleled by a season of considerable drought with summer rain rare. Precipitation is occasionally heavy with as much as 1.8 inches falling in 24 hours. Once every 10 years, 2.8 inches per day can fall. Monthly amounts of 5.3 inches are likely at some time each winter, and 9.7 inches per month one year in 10.

Wind is generally light, with a northwest origin in summer, and southeast in winter. Speeds of 40 m.p.h. may occur as often as once every two years; 55 m.p.h., no more often than once every 25 years.

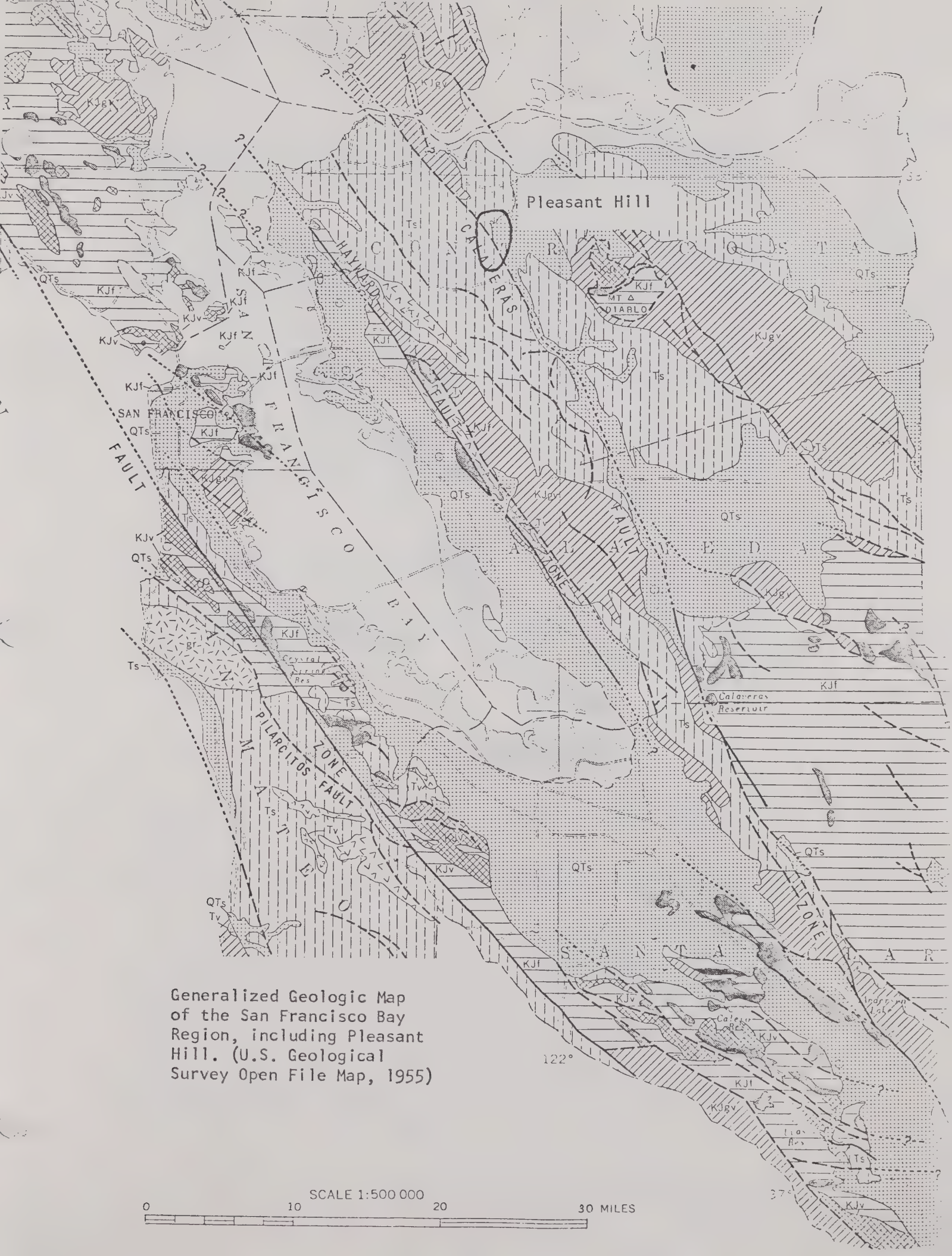
SEISMIC

Earthquakes are the sudden movements that we record when the gradual sliding and slipping along adjacent layers of rock strains the rocks beyond their ability to stretch any farther without snapping.

To understand the implications of specific seismic factors in the Pleasant Hill area, one must see them within the larger frame of the San Andreas Fault system which affects the Greater Bay Area. No single fault in this area is isolated; in the event of a major earthquake movement the entire subsystem of faults could be triggered to move in sympathy.

A fault is the surface or subsurface evidence that earth movement and dislocation have taken place. When long-term storage of earth stresses on either side of a fault line finally reaches its limit and breaks away, it causes the disruptive vibrations which we call an earthquake.

Major dislocations, or faults, occur at the edges of three adjacent "blocks", the large structural formations which underline the Bay Area. The Montara Block, the San Francisco-Marin Block are separated by the San Andreas Fault. The Berkeley Hills Block and the San



Generalized Geologic Map of the San Francisco Bay Region, including Pleasant Hill. (U.S. Geological Survey Open File Map, 1955)

Francisco-Marin Block are split by the Hayward Fault, a zone of acute deformation which has numerous subordinate faults, some of them trending in the same northwest to southeast direction, some of them short cross-faults that cut parallel to the main faults.

One of these north-south fault systems is the Calaveras Crush Zone, seen here about two miles west of Crockett, passing through Franklin Canyon, intersecting Taylor Boulevard in Pleasant Hill at Withers Avenue, then moving southward (evidently between California Boulevard and South Main Street in Walnut Creek). (Maps 2. and 3.)

It is instructive to note the interconnection among the San Andreas, Hayward, Calaveras and Sunol Faults. A shift of stresses along one of these would influence movement in the others. Direct and recent experience of this inter-relationship is available in Los Angeles; the 1971 earthquake there developed in the San Gabriel Fault system, not in the more threatening sounding San Andreas Fault whichis parallel to it. Both fault zones interconnect so intimately with each other, that a release of forces which occurs in one causes drastic damage in the other.

Recent investigations* have given evidence of the proliferation of minor fault slivers which crisscross the Calaveras Crush Zone, mostly parallel to the rock formations and, therefore, difficult to see on the ground as actual gaps or off-sets. However, significant water-seeps, saddles between hills and soil slumps indicating disruption beneath are in line with both the Franklin and Southampton faults or other minor subsidiary faults.

SOILS

Soil is the result of thousands of years of erosion by wind and water working on rock surfaces and the organic material from decaying plants and animals. Over long periods of time this material with the addition of moisture and air have produced soils of very discrete physical and biological characteristics.

The complexity of the soil's effects on the environment must be appreciated: for example, soil is the source, and acts as the reservoir, of all mineral nutrients in the ecosystem. Our knowledge about the soil is categorized by soil scientists according to the structure of its particles, its texture, its ability to hold and release water, its ability to supply minerals and the biological function by which it returns decaying material to humus for enriching the soil. Yet so delicate is this rich top soil that it can be displaced by erosion in a few months or a few years, many times completely irreplaceable despite man's technological ingenuity. Certain soils are very rich in potential

*D. L. Protzman, Earthquake Faults in Contra Costa County, unpublished study, 1972.

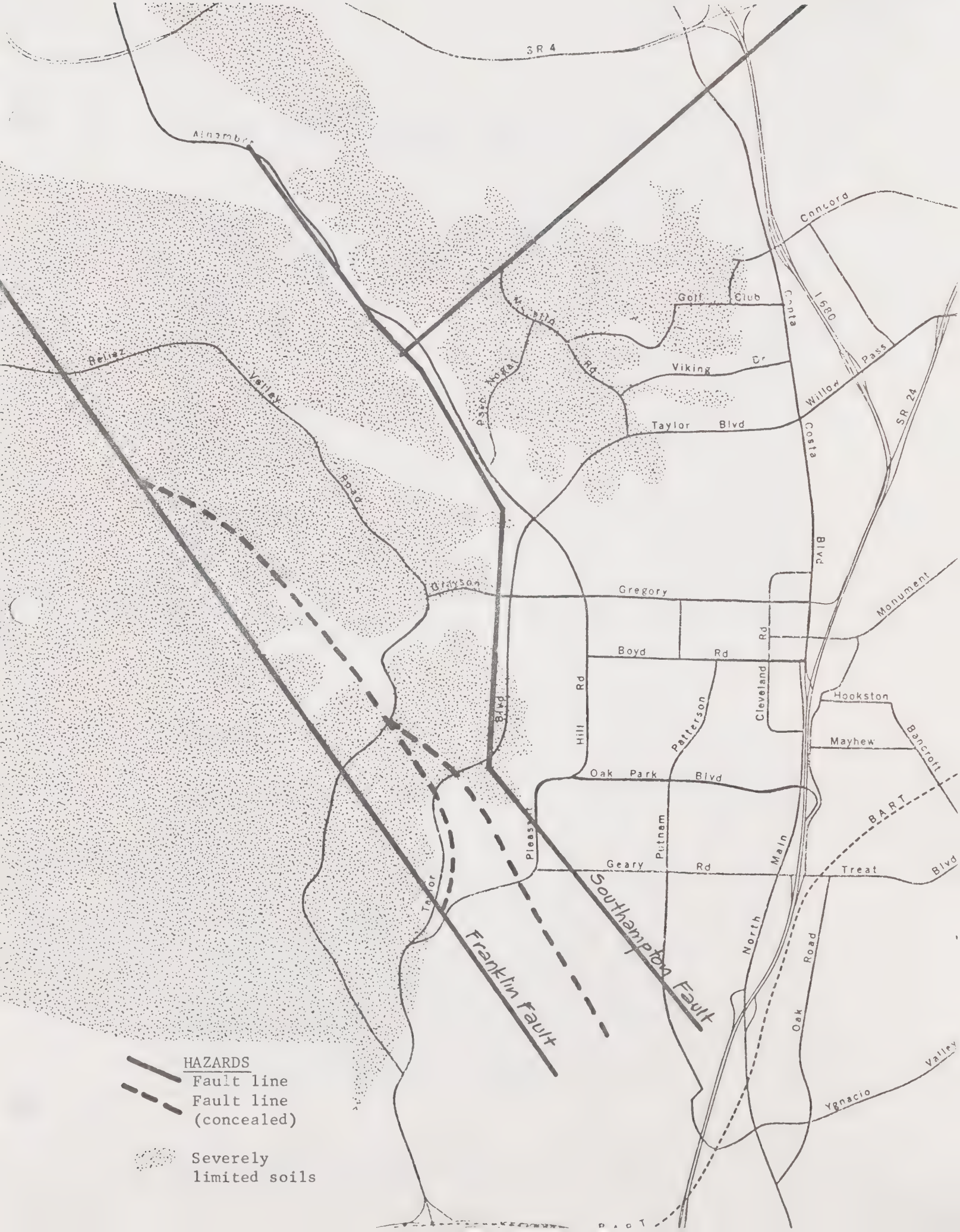
for supporting agriculture; other soils are very thin and respond to plant life only if very heavily fortified with nutrients.

Some soils present sufficient hazards even if unbuilt upon: for example, if they are shallow, lie on very steep slopes or alternately swell and shrink when water is applied. But if these unstable soils overlay unstable geology or if roads and buildings are built upon them, the hazard increases enormously. Approximately 95 percent of the soils on the remaining undeveloped lands within the City of Pleasant Hill pose severe limitations to both the construction of roads and buildings. In addition, soils outside the city limits, but within the Planning Area vary even more from the recommended limits for road and building construction, as set by the Soil Conservation Service. (See Map 3.)

The major factors which impose severe limitations to construction on soils of this area are the high shrink-swell potential, thin soils and steep slopes. In order to respond to each of these limitations, specially engineered foundations may be required even for single family dwellings. To countereffect high shrink-swell potential, a characteristic of clay soils, foundations must be designed especially to resist the alternate expansion and contraction which occurs in response to soil moisture./ There are many cases of dwellings in Pleasant Hill which have suffered failure of the foundation material (cracks, separation) which affect cracking of walls and eventual settling under load of the structures; no special heed was taken at the time of construction to respond to the special soil problems of this area. In cases of thin soils, less than 20 inches to bedrock, underground utility lines may be installed only at great cost. Building foundation design must consider the difference between bedrock and soil placement. In cases of steep slope areas, the possibility of soil erosion, slides and slumping are greatly increased and greater consideration of grading and soil stability must be taken into account. The design of buildings within these areas must conform to the topography to reduce or eliminate its intrusive effect upon the hillside area.

All of the foregoing applies to roads which are built on the same limiting conditions. Soils with high shrink-swell potential and great erosion hazard will affect the load supporting capacity and stability of the subgrade and may cause cracking of the road surface or undermining of the subsoil; such roads may collapse, especially at the downslope edge. Roads built in steep areas (over 15 percent) may require a great deal of cut and fill which not only defaces the natural character of the slope, but also implies greater possibility of landslide. Therefore, road design on steep slopes and other areas of severe soil limitation must be tailored especially to the site: for example, divided roadways at split elevations can minimize the effect of cut and fill; narrower roadways than are usually permitted in flatland situations, can be allowed in hilly areas.

If a rainstorm on bare soil has loosened soil particles, runoff will carry the particles away, sometimes 10 times faster on these


SR 4
Alhambra
Concord
Golf Club
Mt. Zion
Rd
Viking Dr
Willow Pass
SR 24
Taylor Blvd
Bailez Valley Road
Grayson
Gregory
Monument Blvd
Boyd Rd
Hill Rd
Patterson Blvd
Cleveland Rd
Hookston
Mayhew
Bancroft
Oak Park Blvd
Pleasant
Putnam
Main
Geary Rd
Treat Blvd
BART
Taylor
Franklin Fault
Southampton Fault
North Oak Road
Ygnacio Valley
HAZARDS
Fault line
Fault line (concealed)
Severely limited soils

paved areas than on unpaved land. Soil erosion by water, repeated many times, ruins land for most purposes. Soil thus washed from its place becomes the sediment which chokes streams, pollutes water, kills aquatic life and curtails the effectiveness of dams and reservoirs.

But such hazards characterize much of the soil on the land which remains undeveloped in Pleasant Hill. Map 3, derived from Soil Conservation Service data, indicates certain areas where the soil contributes such a limitation to building structures and to roads that decisions must be made whether to build at all.

VEGETATION

The native and introduced plant varieties of the region play a number of important roles in our life system. Key elements in the evaluation of natural processes, the plant societies contribute essential but constantly replaceable resources. Only if others of the natural processes are irreversibly damaged or one of the irreplaceable resources such as soil were permanently lost, would vegetative regenerations, season to season, cycle after cycle, fail to take place.

The major modifications which vegetation is constantly making in an ecosystem directly determine the kinds of organisms that can live there. Vegetation modifies extremes of temperatures, acts in the hydrologic cycle to transfer moisture from the soil to the air by transpiration, and creates humus for soil refertilization.

Plant Varieties

Grassland: Little remains of the native grass varieties since so much grazing and reseeding of pasture have taken place. The annual types which dominate are slender oat, rye grass, soft cheat, and alfileria. Other herbaceous vegetation such as bracken and wooly mules ears are found associated with these grasses.

Mixed woodland and grassland: Savanna: Oaks set spaciously in grassy meadows make this formation recognizable, and create the atmosphere of an intentional parkland. Oak varieties included are Quercus agrifolia, Quercus lobata, Quercus wislizenii and Quercus kelloggi.

Foothill woodland: Oaks here mix with evergreens, California bay laurel, and buckeye; in the understory, toyon, coffeeberry, poison oak and ceanothus are found intermittently.

Chaparral: These are low growth, tough species including chamise, manzanita, toyon, buckthorn, scrub oaks and poison oak.

Riparian: This is the series of plant types which cluster in a creek-side environment, whether the watercourse is permanent or intermittent, because the species put down deep roots to the water table. Included are California bay, buckeye and sycamore, white alder, bigleaf maple, cottonwood, walnut, coast live oak and several varieties of willow.

Introduced vegetation must also be taken into consideration of which orchard trees, vineyards and domestic landscape plantings are prominent.

Grazing Lands

Many of the rolling meadows, even some very steep slopes, have been traditionally sown in edible grasses and plants to nourish the grazing stock (horses, cattle, sheep) of the area's ranchers. Before that, the slopes were natural meadow replenishing the hills with a carpet of green every spring. With the advent of the rancher, grasses were sown to replace the native meadow growth.

The rancher with his foraging herds has been the unpaid landscape architect of much of our hill land. Without these animals to browse down the tall grasses, mid-summer dry weather brings the threat of innumerable brush fires. In addition, many plant species cannot persist without grazing, just as a homeowner's lawn will not survive without mowing. The accelerated transformation of many former ranch lands into residential subdivisions has caused the potential danger of fire on neighboring meadow lands to portend a greater cost: the possibility of loss of human life or loss of property in the subdivisions. By mid-May, what was earlier a lush green grassland is a brown carpet of highly flammable grass and low shrubs. Thus, local fire departments have had no alternative in areas of tall grass which is no longer grazed but to enter with roto-tilling equipment and uproot the dry and combustible grasses.

Many areas of Contra Costa County remain prime grazing land. A high percentage of horsemen reside here and keep their horses in local stables. In Pleasant Hill there are still several horse ranches; on the western slopes of the planning area, the land which adjoins Briones Park is grazed by several large ranches.

Grazing of the upland meadow area is an economical and appropriate use of the land: economical of resources, since grazing there makes only a superficial change in the land, while leaving no apparent disfigurement. Grazing is economical and appropriate on the steep slopes also because development of these lands for residential use causes the destruction of the natural grass cover that prevents or reduces the erosion effect of water run off. Development within the hillside grazing lands can be costly, not only to the developer, but also to the general public. Construction within the hillside areas can increase the fire hazard to the combustible grass, cause additional slippage of poorly compacted base material and generate additional run-off due to the reduction in water absorption area.

Furthermore, something must be said for reserving some of the still viable land uses of the recent past as a visible link to our past, when land in agriculture or pasture was the chief means of livelihood.

Some of the land will and should evolve toward urban uses, however, and we must be careful to avoid severe disruption of the native vegetative cover as the transition from pastoral to urban uses occurs. To conserve the community of plant associations which have successfully adapted to the climate in this region, must be an aim of our planning. In addition, these natives can be complemented with the introduction of other varieties selected for their hardiness in some of the area's limited-to-poor soils and oppressive summer drought conditions. Otherwise, excessive watering of exotic speciments and delicate plantings can cause over-saturation of soils on slopes and eventual slumping of these heavy-when-wet soils. Good planning can provide lists of recommended plantings for a site within a given climate zone and having a specific sun and wind orientation, soil condition and degree of slope.

Wildlife Habitats

In discussing open space which functions to encourage those wildlife species important to the total ecosystem management of the central Contra Costa County area, the most important single item to bear in mind is that animal nesting, feeding and circulation does not respect jurisdictional boundaries. A deer or hawk, a grass snake or a squirrel doesn't know whether he is feeding in the Planning Hill planning area or Walnut Creek or Lafayette.

We are a long time removed from the days when the entire valley, in which Pleasant Hill is situated, was a river bottom environment in which deer and elk, bear and wolves, many types of squirrels and reptiles and such predatory mammals as ringtail cat, such birds as the peregrine falcon and the golden eagle could be found.

Animals and birds need to move readily from place to place as the seasonal changes provide or deprive them of water, food, or vegetative cover. In today's pattern of urbanization which creates freeway barriers that a land animal can no longer cross to reach his feeding ground, the major need is to reserve large open areas, meaningfully linked to one another, so that these circulations through the area can continue. Otherwise, these wild creatures are forced to intrude into developed areas; not uncommon is the housewife's complaint that the best, tender spring shoots of backyard fruit trees have been browsed off by a hungry deer. At that point, the otherwise benevolent deer becomes a "pest" to be exterminated.

To insure that the corridors of open space are left open, reserving the ridgelines is of paramount importance. If these

corridors of open space remain free for the animal population to use in circulating from one feeding ground to another, most creatures will avoid intruding into subdivisions of houses. Nevertheless, a few creatures will choose instead to cross a developed area. Then the populace must be instructed in ways of discouraging them by the most benevolent means possible, if this resource in wildlife is to be conserved.

RESOURCES: RENEWABLE AND NON-RENEWABLE

In summary, we can name those environmental elements which are resources not likely to be renewed within man's lifetime on earth. These are rocks, soil, topographic land forms such as hills, knolls, streams, etc., and must be classified as "non-renewable". It is these resources that are most in jeopardy when a major dislocation of them to suit man's purposes is contemplated. Special limitations on grading of soil, removal or exposure of rock, alteration of natural stream courses, destabilizing slopes greater than 30 percent, etc., must be enacted and enforced upon developers of land.

Even those resources which can be classified as renewable, such as water and air, climate, vegetation and wildlife, are not always renewable in entirety. For example, some species of birds have succumbed to extinction and yet others continue to survive and multiply. The species which have succumbed may be defined as non-renewable resources.

Or, the so-called "renewable" resources of water and air may be polluted beyond use in a given area for several generations of lifetimes, even though theoretically it is possible to purify polluted air and cleanse fouled water. If man continues the wasteful practices which cause such pollution, these so-called renewable resources might just as well be considered non-renewable, since man apparently lacks the will to renew them.

The large subject of climate is so far an unknown: can the changes which man has created in the air, water, topography and biological communities cause the climate to be altered to such a degree that the most hospitable climates on earth, which assure a kindly milieu for many, may be impossible to reconstruct except within a huge plastic climate dome? If so, we would have to classify climate also as non-renewable.

HAZARDS

Water Hazards:

FLOOD WATERS

Preserving the natural drainage is in many ways preferable to replacing it with enclosed sub-surface systems, not only for aesthetic reasons, but also because storm drainage is much more effectively handled by the natural system.* When the developer is encouraged to preserve the natural drainage channels and flood plains, even creating artifical lakes by impoundment, he is not only providing recreation and an aesthetically attractive environment, but also space for the temporary storage of storm runoff. In all cases where the natural drainage patterns have so far been undisturbed, developers should be encouraged to design so-called "blue-green" areas, which are the planned integration of permanent water areas in open spaces with the provision for flood water storage.

SEDIMENTATION DUE TO DEVELOPMENT

Not only does the erosion of incompletely stabilized surfaces, such as hillsides and streambanks, mar the aesthetic quality of the landscape but also it contributes large amounts of sediment to the local watershed area. When construction of new development takes place during the peak runoff season, from late fall through spring, the increase in sediment bearing water is staggering. Artificial lakes may "silt-up" and require expensive dredging within several years of construction; natural watercourses may be choked and "die" long before they would naturally. To countereffect this sedimentation due to development, the use of sediment traps on the construction site itself, immediate stabilization of natural and man-made channel banks through planting of vegetation or placement of stone, and developmental practices which limit both the amount of land exposed and the time during which it is exposed are several of the measures which can be required of the land developer.

WATER POLLUTION

Even cities which have no polluting industries must be aware of the sources of locally generated pollutants. One of the most potent causes of algae bloom which chokes waterways is the runoff of the rich nutrients which are carried from fertilized lawns and gardens of homeowners. These are not the same algae which nourish fish or the problem would be overcome by them; instead, unless a consumer of the algae is introduced, the algae can bloom uncontrolled, choking streams and lakes.

In addition, the drainage from streets and parking lots contains the pollutants which are deposited on the pavement by cars leaking and exhausting fuel. Frequently this drainage water, charged with dangerous

*Page G3, David A. Rickert and Andrew M. Spieker, "Real Estate Lakes", U.S. Geological Survey Circular 601-G, U.S. Department of the Interior, 1971.

hydrocarbons, courses into an otherwise innocent stream.

Pesticides, animal droppings and other wastes add to the list of pollutants which even a small suburban city is capable of contributing to the water system, when runoff from paved or planted areas carries them there.

LANDSLIDES

Pleasant Hill is located in a zone of moderate to high landslide frequency, according to recent researches of a U. S. Geological Survey Team.* All radical downslope movements directly due to gravity are considered landslides except the pheonomenon of soil "creep" which is a regular and imperceptibly slow movement. An area which has a history of considerable landslide activity can expect future landslides, since new and renewed sliding is commonly associated with areas of pre-existing landslides. The U.S.G.S. Report is not sufficiently detailed to determine whether specific slopes in the city are vulnerable, but even such general data ought to be sufficient to put anyone who builds on steep slopes or instable soils on the alert.

For example, "unloading" the toe of a slope can cause the slide area to adjust itself to restablize the original hill form. For this reason, all potential slide areas must be located and protected from indiscriminate building which would be affected by such land movement.

All four factors, hydrology, geology, soils and seismic character may act to create a natural catastrophe such as a landslide when unstable material breaks away and moved down a steep slope.

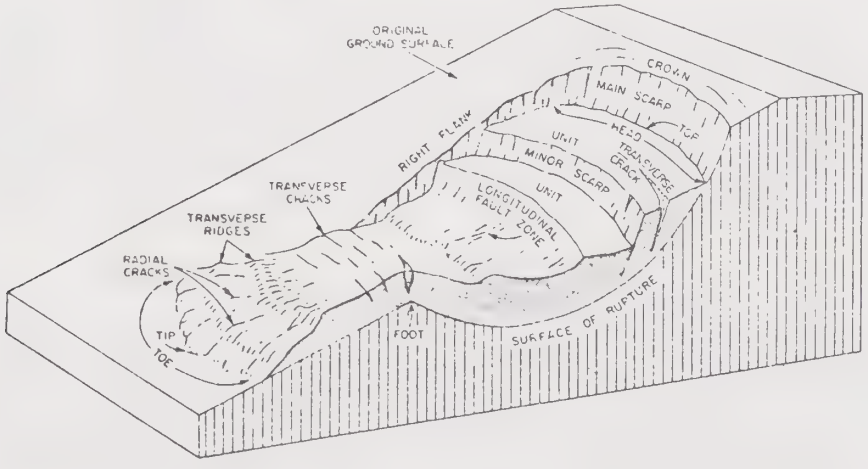


Illustration: an "ideal" landslide and its salient features.

*Dorothy H. Radbruch and Carl M. Wentworth, "Estimated Relative Abundance of Landslides in the S. F. Bay Region", S. F. Region Environment and Resources Planning Study, 1971.

However, man has a dynamic effect upon the landscape, too, and his thoughtless intrusion upon the landforms may bring catastrophe both to him and his built environment, in addition to causing permanent landscape alteration, such as destruction of vegetation and the wildlife it shelters, erosion and the resultant deposition of silt and sand in lakes, reservoirs, and other waterways.

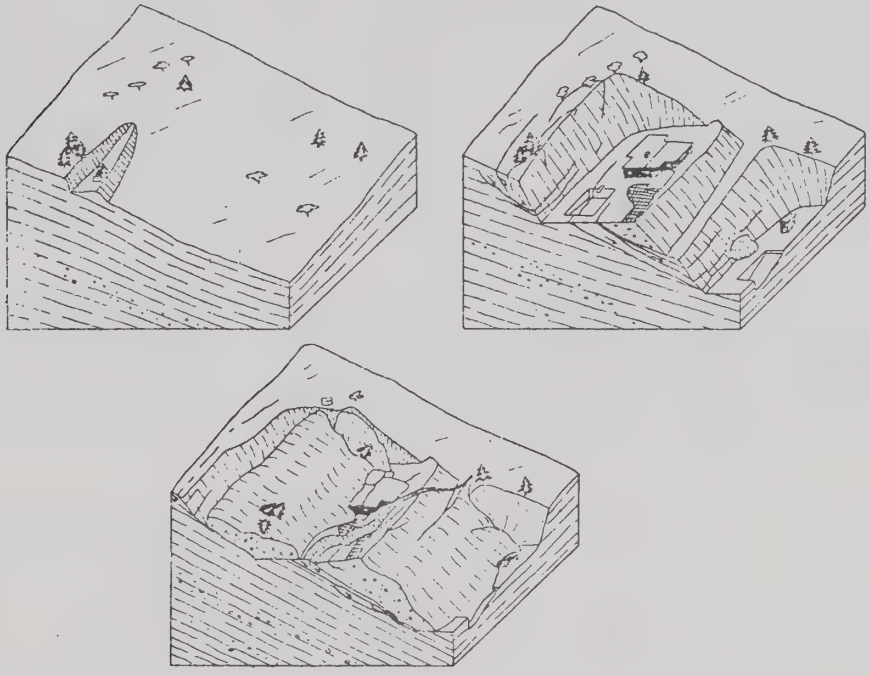


Illustration: Three stages in the dynamic development of a man-made landslide.

Above is a graphic representation of what effects a slumping of the land or an actual landslide may have on houses whose lots are terraced into a steep slope by the conventional, yet highly questionable cut-and-fill method.

PUBLIC FACILITIES

DRAINAGE

During the days when cargo ships came into port at Pacheco, the lower elevations of Pleasant Hill were mainly marsh. Later, most of Pleasant Hill which lies in the flood plain was reclaimed for agricultural purposes of which little remains today. To accomplish the drainage, a network of channels was created along with drainage conduit to lower the watertable and to accommodate the runoff during the winter rainy season. Surface water within the planning area is handled by a network of small intermittent streams which flow eastward from the Briones Hills and foothills toward the major drainage facilities of Grayson Creek. Several stream courses remain running the year round, notably Murderer's Creek and the westernmost portion of the west fork of Grayson Creek.

In many cases, the natural streamcourses have been altered by man, many times without regard to its intrusive effect upon the natural pattern. Huge drainage channels have been created in the shape of rectangular and trapezoidal concrete, each designed to provide the easiest and most expedient method of handling drainage.

Having had their banks fixed and their beds lowered to conform to the engineered design imposed by the necessities of a 100-year flood, the downstream reaches of Grayson and Walnut Creek offer little visual amenity. Nevertheless, plans are underway to restore as much of the original creekside environment as is possible alongside these man-made channels and more pressure needs to be applied to the public agencies involved to see the channels for their multi-purpose recreation potential.

WATER SUPPLY

Contra Costa Water District has recently inherited administrative operation of the Contra Costa Canal from the U.S. Bureau of Reclamation and is actively subscribing to a county-wide cooperation among jurisdictions which will install and maintain 11.5 miles (Phase One) of hiking, biking and horseback riding trails along the right-of-way which frames the canal. Thus, linear open space is opened up for public use, essential if the various areas of recreational open space in the region are to be functionally linked. In some areas, the right-of-way for trails is 60' wide, but in others, as much as 140' wide, lending additional space for the introduction of small wayside parks, resting areas for trail uses. If Land and Water Conservation Funds are awarded during 1972-73, monies for trail development will be available this year on a matching basis for the cities involved.

Gregory Gardens Water District maintains its treatment plant and storage water tank on .58 acres of land beside the Contra Costa Canal south of Taylor Boulevard. This land can be expected to function as open space in perpetuity and may be interpreted as multiple-use open space for public use as soon as a meaningful link can be made to area

trails (such as the Contra Costa Canalside trail) and local recreational open spaces. Combined with the adjacent city-owned 5-1/2 acres, this area might become one staging area of a park-and-trail linked system.

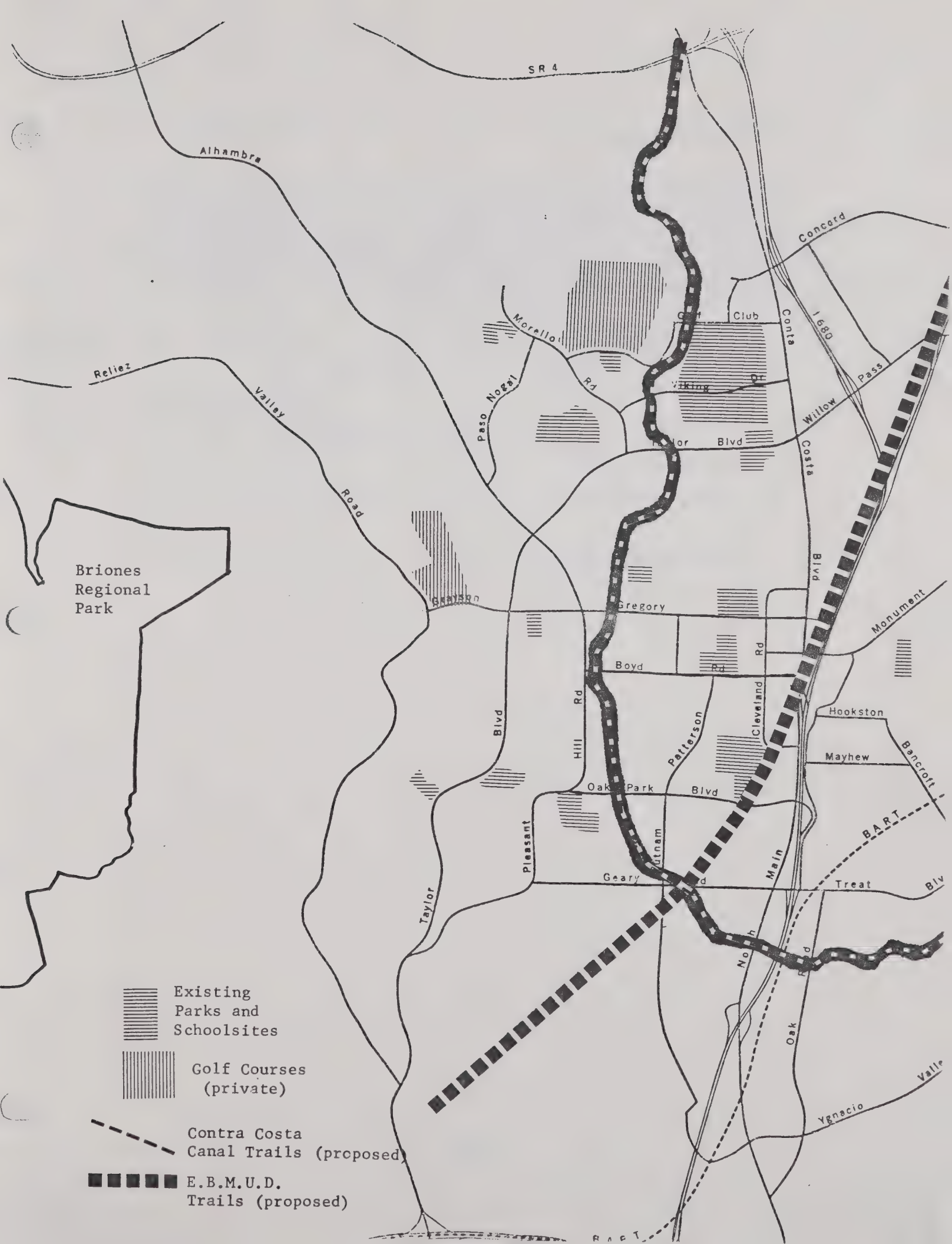
East Bay Municipal Utility District owns approximately 25 acres of land within Pleasant Hill's planning area, including the Mokelumne Aqueduct, which brings water underground from the Sierras. Also included are 1/5 acres at Brookwood Reservoid and approximately 10 acres off Reliez Valley Road. Municipal Utilities District land (EBMUD) is a regional resource and makes an enormous contribution to the preservation of a semi-wilderness open space in the area. The primary purpose of their landholding, of course, is the protection of the watershed area which drains into the major reservoirs; in the Pleasant Hill area, the many acres of westward watershedding slope west of the Briones Hills channel water into the San Pablo Dam. These large holdings are necessary to maintain high water quality in the reservoir water. But in addition, the entire region benefits because these lands remain nesting and feeding grounds for many species of wild creatures. As long as we need to retain these areas to assure water quality, the dual purpose of maintaining wildlife habitats away from the intrusion of man is safeguarded.

HOW MUCH OPEN SPACE DO WE ALREADY HAVE?

LOCAL PARKS

Presently held Recreational and Park areas are the tangible base for the open space land inventory, since they are already set aside for public benefit and have been withdrawn permanently from development. The City of Pleasant Hill together with the Pleasant Hill Recreation and Park District owns 108 acres of park, some not yet developed.

	PARKS	ACRES	FACILITIES
1.	Pleasant Hill Park	17	playing fields, swimming pool, passive pursuits, tot lot
2.	Rodgers Smith Park	4.5	playing fields, sports courts, tot lot
3.	Pleasant Oaks Park	11	sports fields, tot lot, passive area
4.	Dinosaur Hill Park	13.6	undeveloped, hiking
5.	Brookwood Park	6.3	picnicking, day camp, overnight camp
6.	Paso Nogal Park	33	natural area
7.	Civic Center Site	9.8 (less bldg. sites)	passive pursuits
8.	Pinewood, Unit II (Park land Dedication Ord.)	.75	passive recreation
9.	Shannon Hills (Park land Dedication Ord.)	2.5	natural area
10.	Jones Property	7	natural area
11.	Big Rock Park (K-Mart)	2.5	passive area
	TOTAL PARK LAND	108 acres	


SR 4
Alhambra
Reliez
Valley
Road
Briones
Regional
Park
Morello
Rd
Paso Nogal
Concord
Conta
1680
Pass
Willow
Costa
Blvd
Gregory
Boyd
Rd
Monument
Hookston
Mayhew
Bancroft
Cleveland
Patterson
Hill
Rd
Blvd
Oak
Park
Blvd
Pleasant
Taylor
Geary
Main
Treat
BART
Oak
Ygnacio
Existing
Parks and
Schoolsites
Golf Courses
(private)
Contra Costa
Canal Trails (proposed)
E.B.M.U.D.
Trails (proposed)

STATE AND REGIONAL PARKS

State and Regional parks are included in this summary of available open space not because they swell the City's inventory, but because their existence relieves the pressure on the City to provide areas of such magnitude to meet its residents' need for such large expanses of near primitive land. The park areas listed are all within one hour's drive of the City of Pleasant Hill.

EAST BAY REGIONAL PARK DISTRICT	ACRES	FACILITIES
1. Briones Park	3,057	All within one hour's drive of Pleasant Hill and having extensive facilities from hiking and horseback riding trails to playing fields and swimming areas.
2. Las Trampas	1,465	
3. Charles Lee Tilden	2,065	
4. Sibley (Round Top)	227	

STATE OF CALIFORNIA

1. Mt. Diablo State Park

PRIVATE OPEN SPACE

Land in private holdings which meets a recreational or park-like need is listed below, not to increase the numerical inventory of open space in Pleasant Hill, but rather to indicate that city residents benefit indirectly from the proximity to private golf courses and open areas such as cemeteries. Usually these institutions preserve the existing landforms and vegetation and add a greater portion of landscaping which shapes them as a welcome neighboring use to residences and public lands within the city.

PRIVATE OPEN SPACE	ACRES
Golf Courses	
1. Pleasant Hill Country Club	50
2. Contra Costa Golf Club	165
Cemeteries	
1. Oakmont Cemetery	
2. Queen of Heaven	

PUBLIC UTILITIES LANDS

Many lands which are owned by public utilities are "bonus" open space which adjoining cities enjoy without having to acquire them. In some cases, the City of Pleasant Hill has been invited to develop and use rights-of-way across utility land. Several opportunities exist for development of linear systems (pedestrian, bicyclist and horseback riding trails) and landscaped green belts along these rights-of-way. Only the appropriation of funds hinders the realization of the potential of these existing sites.

	PUBLIC UTILITIES LANDS	ACRES	FACILITIES
1.	East Bay Municipal Utility District - Reservoir Areas Open to the Public		
	Lafayette Reservoir	810	recreation,
	Briones Reservoir	740	water related uses
	Mokelumne Aqueduct R.O.W. 100' wide; almost 2 miles in length (10,000')	25	hiking, biking, riding trails
2.	Contra Costa Canal - right-of-way varies from 60' - 140' in width for 4 miles	44	hiking, biking, riding trails
3.	Flood Control District - waterways - Development of multiple purpose use	20	recreation and trails
4.	Pacific Gas and Electric - transmission tower R.O.W.		hiking, biking, riding trails

	PUBLIC TRANSPORTATION CORRIDORS	FACILITIES
1.	Southern Pacific Railroad right-of-way - bordering tracks	hiking, biking, riding trails
2.	Bay Area Rapid Transit - linear landscape beneath elevated B.A.R.T. tracks	pedestrian trail

HOW MANY PEOPLE MUST WE PLAN PARKS FOR?

The projected population growth of the City of Pleasant Hill and the area within the Recreation and Park District's boundaries has been calculated at both the lowest likely rate of growth, 4 percent, and the highest likely rate, 8 percent. These are the high and low rates of growth observed since Pleasant Hill's incorporation in 1961.

	1970	24,610	+	5,000*	=	29,610**
February	1973	27,150	+	5,000*	=	32,150**
	1980 @ 4%	34,454	+	7,000*	=	41,454**
	@ 8%	44,298	+	7,000*	=	51,298**
	1990 @ 4%	48,235	+	7,000*	=	55,235**
	@ 8%	79,736	+	7,000*	=	86,736**

*Add 5,000 to 7,000 extra population for residents of the Recreation and Park District, whose boundaries encompass a greater area than the city limits of the City of Pleasant Hill.

** Total projected population including City of Pleasant Hill and Recreation and Park District.

PARK ACREAGE NEEDS

Today, with 108 acres of park for 32,150 people, our ratio of parks to people is 2.97 acres per 1,000 population. This is considerably below the desired ratio of 5 acres/1,000, a standard which is described on the following page. To make up the difference between 2.97 and 5 acres per 1,000, Pleasant Hill must achieve a total of 160 acres by adding 52 new acres to meet its needs for today's population of 32,150.

In addition it follows that:

	PROJECTED POPULATION	ADDITIONAL ACRES NEEDED	NEW TOTAL
By 1980	41,454 (low estimate)	99 acres	207 acres
	51,298 (high estimate)	148 acres	256 acres
By 1990	55,235 (low estimate)	168 acres	276 acres
	86,736 (high estimate)	325 acres	433 acres

Since most of the developable land remaining in the Pleasant Hill Planning Area is hill land, it is reasonable to expect that the growth rate will not be that of the high growth rate years. Thus we have chosen to use approximately 55,000 as the likely population figure for 1990. Therefore, in order to achieve a total of 276 acres of park land by 1990, 168 more acres must be added to our stock of land by then.

RECREATION AND PARK STANDARDS

The recreation element of the General Plan establishes guide standards for the amount of park land that is needed, the size of parks and the service area of different types of parks. The standard, as set forth, is 5 acres per 1,000 persons which excludes credit that had previously been given for school recreation fields. The recreational element also suggest the establishment of two types of parks, neighborhood and community. The Park Dedication Ordinance adopted in April, 1972 requires four acres of public property for each 1,000 persons residing within the city to be devoted to park and recreational purposes. As of this writing a revision of the Park Dedication Ordinance is being readied for submission to City Council which would increase the amount of land developers are required to dedicate to 5 acres per 1,000.

GUIDE TO PER CAPITA NEED FOR OUTDOOR RECREATION AREAS

Neighborhood Parks	2 acres per 1,000
Community Parks	3 acres per 1,000
TOTAL	5 acres

DEFINITIONS:

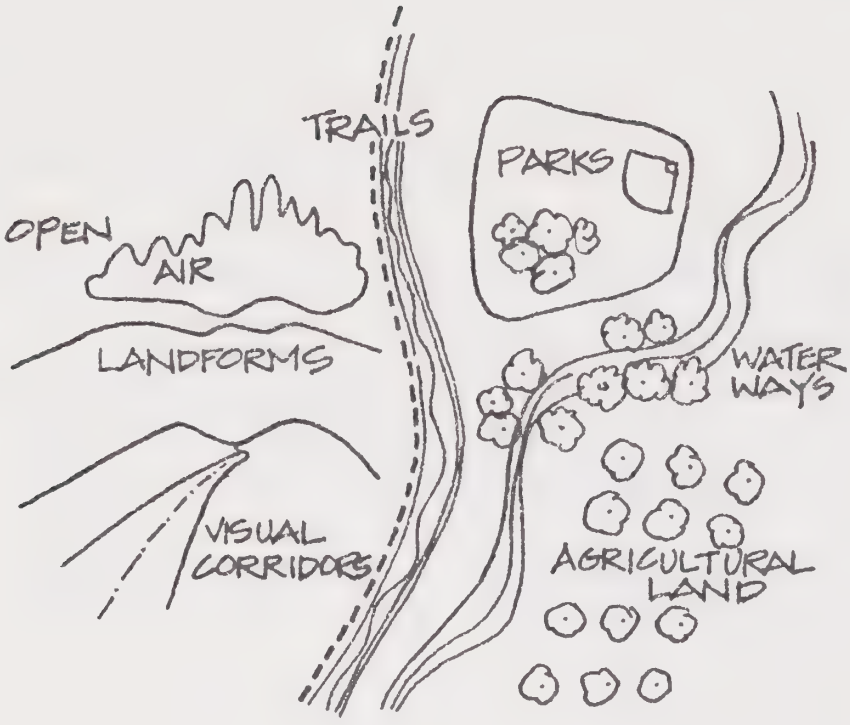
Community Parks are those parks of 20-50 acres which are within a mile's distance from the residents they serve and attract more people because of extensive facilties. One community park ought to be maintained for every 15,000 people. In addition to passive recreation areas and small group play areas, a community park might include a major installation such as a swimming pool or a riding stable, plus regulation size athletic fields.

Neighborhood Parks are areas of at least 3 to 5 acres within walking distance or 1/4 mile from the residents they serve. Small scale play equipment, play lots, paved game areas and restful passive recreation space make up the neighborhood park. Depending on the density of the surrounding development, the neighborhood park serves 2,000 to 4,000 residents.

INVENTORY:

Community Parks	Acres
1. Pleasant Hill Park	17
2. Paso Nogal Park	33
3. Civic Center Site and Frank Salfingere Park	9.8

Neighborhood Parks	Acres
1. Rodgers Smith Park	4.5
2. Brookwood Park	6.3
3. Dinosaur Hill Park	13.6
4. Pleasant Oaks Park	11
5. Jones Property (undeveloped)	7
6. Shannon Hills Park	2.5
7. Big Rock Park	2.5



THE MANY FACES
OF OPEN SPACE

Trails and other linear systems, visual corridors, scenic highways, agricultural lands, waterways and ridgelines, etc., expand and diversify the definition of open space. The following graphic statements amplify the concept of open space and the criteria by which we may judge the additions we forsee for Pleasant Hill's expanding needs.

OPEN SPACE STANDARDS

Over the years very little has been done in the development of standards for open space needs. In many general plans, open space has been listed under "streets", "undeveloped land" and "vacant areas". It has only been in the last few years that positive concern has been directed toward the need for real open space, an area left in its natural state or an area devoted to agricultural pursuits, not just an area of land designated as only "vacant" or "undeveloped".

Based upon the desire to preserve the remaining natural resources of the community, to raise the quality of life and quite possibly to maintain property value within the area, we are recommending the following standard for open spaces needs:

*Fifteen acres of land per 1,000 population within the planning area devoted to open space on hills and ridges along streams, valleys, and scenic recreation routes; open space in the form of reservations and recreational areas left in their natural state.

Ownership may be in fee title by the city, county, state, federal or other governmental jurisdictions. In certain locations, title by less than fee simple shall be appropriate and rights may be obtained by easements or other similar methods.

Which lands can be included in our present inventory of open space? While they were not included in the stock of usable recreation and park areas (pages 42-43), such lands as those lands enumerated below, held by public and private utilities, can be counted as open space because they are tangent to residential areas within the city and offer visual and auditory relief from the complexity and confusion of urban development. Furthermore, some of these publicly held lands have been offered to the city for development of recreational trails. For example, the East Bay Municipal Utility District has offered its right-of-way for pedestrian, bicycle and horseback riding trails; the Flood Control District has assented to the city's development of trails along Grayson Creek channel; the Federal matching funds are being sought to develop trails along 11.5 miles of Contra Costa Canal, a system which will eventually link Concord, Walnut Creek and Martinez with Pleasant Hill in an alternative route to the motor network.

In addition, the presence of two private golf courses lends open space to Pleasant Hill residents, even those who never tote a golf bag. Golf courses are oases of vegetation, bird and small ground animal life, and in most cases they preserve the rolling character of the natural landforms. However, since these are privately owned and not guaranteed to remain in their present benign use indefinitely, it does not seem correct to add them to the stock of permanent open space.

Thus, we can add up our inventory of meaningful open space that relates directly to Pleasant Hill.

Contra Costa Water District	44
Flood Control District (Grayson Creek)	20
East Bay Municipal Utility District Right-of-Way	30
TOTAL	94

OPEN SPACE NEEDS

Based on the population projected for 1980 and 1990 (low estimate, see page 41), Pleasant Hill will need to have acquired:

	ADDITIONAL ACRES NEEDED	TOTAL ACRES
By 1980	521	615
By 1990	731	825

These figures are based on the desired ratio of 15 acres per 1,000 population as the standard. This means that with a present planning area population of 32,150, we need to arrive at a total of 480 acres today. Having counted 94 acres of presently held open space in Pleasant Hill, 386 acres remain to be acquired to meet today's needs.

CONCEPTS

In general the kinds of recreational, park, and open space needs are described in outline and simplified graphic means on the following page. However, the actual selection of sites and specific description of recreational needs awaits the detailed scrutiny of both City and Recreational and Park District staff plus the input of citizen participants who will work on the updating of the General Plan during the coming months.

1. Selection of sites:

   A. Parks-in-town:

      1) Centralized neighborhood and community parks, within walking distance of residential areas; a combination of paths, landscape materials, and calm water, plus provision of areas for:

         a) Passive pursuits (sitting, chess, picnicking)
         b) Moderate exertion (horseshoes, lawnbowling)
         c) Energetic exertion (ball fields, playing courts)
         d) Indoor community centers (all-weather social areas, indoor games and sports)
         e) Plazas and other central civic open spaces
         f) Adventure playgrounds

   B. Periphery parks:

      1) Motorists-attracting areas (vista points, rest areas)
      2) Primitive areas to remain undeveloped

      (Depending on their size and service areas these may be classified as neighborhood or community parks)

   C. Linear systems:

      1) Scenic Recreational Corridors

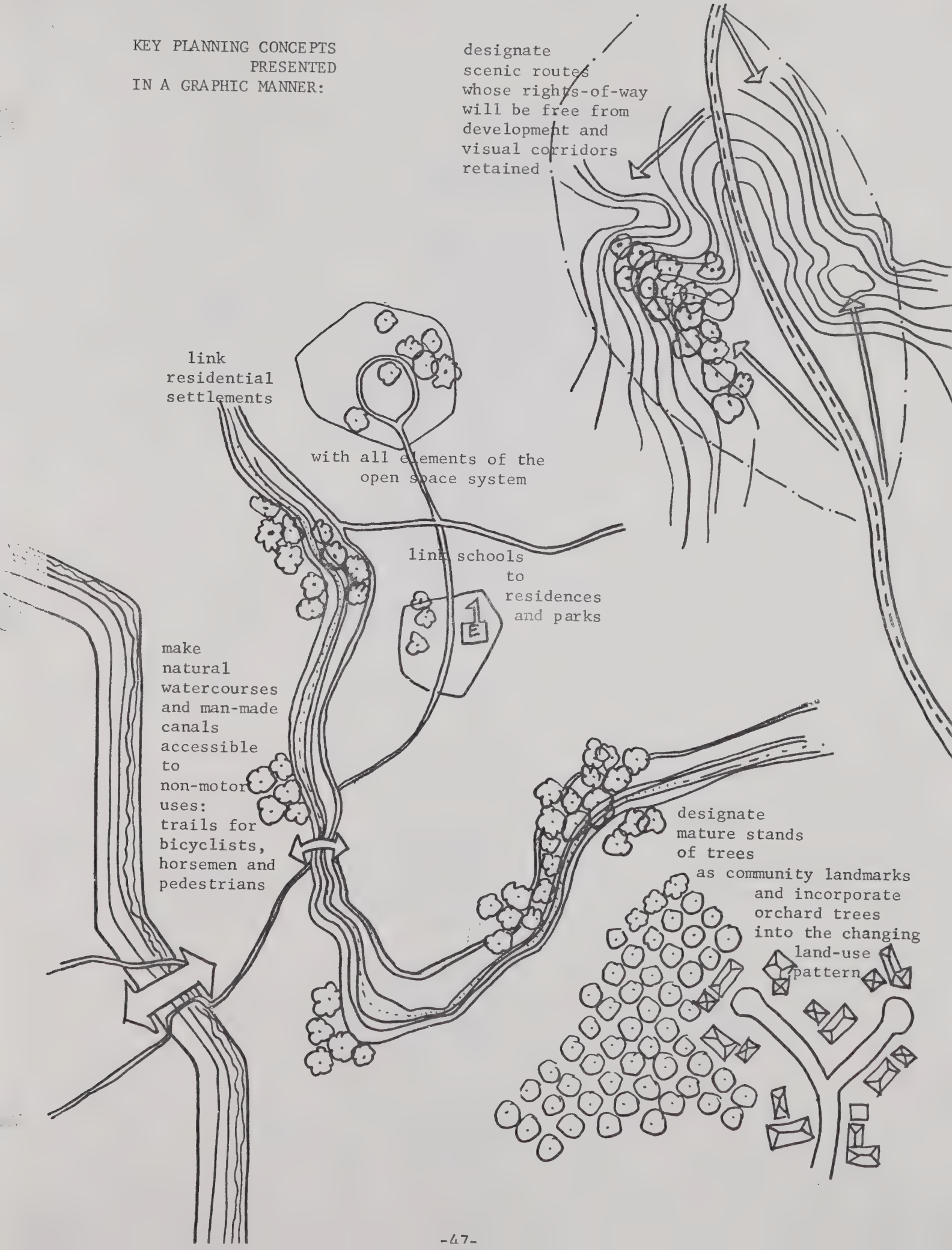
         a) Taylor Boulevard
         b) Paso Nogal
         c) Alhambra Avenue
         d) Reliez Valley Road
         e) Grayson Road
         f) Morello Avenue
         g) Withers Avenue
         h) Gloria Terrace

      2) Pathway system within developments of residences

         a) interior to the development, not at curbside;
         b) combined with bike trails

      3) Green belts

KEY PLANNING CONCEPTS
PRESENTED
IN A GRAPHIC MANNER:



D. Permanent open space:

1) Ridgeline and major landforms
2) Agriculatural and grazing land
3) Stream Courses
4) Areas of outstanding vegetation and wildlife habitat

2. The need is not only for selection of new sites, but developing the potential of existing sites:

A. Linear Parks	Description	Proposed Uses
East Bay MUD Utility District Right-of-Way	9,400 lineal feet; northeast-southwest link connecting Concord, Pleasant Hill & Walnut Creek links schools, neighborhood park, Contra Costa Blvd. commercial area, and Larkey Park in Walnut Creek;	pedestrian path bicycle trail horse riding trail
Contra Costa Canal	north-south link of Martinez, Pleasant Hill & Walnut Creek link with E.B.M.U.D. r-o-w at Geary Road; links three intermediate schools and junior college;	pedestrian path bicycle trail horse riding trail
Flood Control	Grayson Creek: future creek improvements allow creekside trails from Second Ave. south to Valley View Intermediate School; East Fork: future underground conduit would permit surface development of trails from Gregory Lane south to Sun Valley Ave.; Murderer's Creek: future underground conduit from Gregory Lane to Boyd Road permits surface use for trails.	pedestrian path bicycle trail horse riding trail

Linear Parks	Description	Proposed Uses
Southern Pacific Railroad r-o-w	north-south link for most of the Central County;	pedestrian path bicycle trail
	non-vehicular link to BART	horse riding trail
Bay Area Rapid Transit (BART)	linear landscape beneath elevated tracks	pedestrian path
Pacific Gas & Electric r-o-w	transmission tower corridor	pedestrian path bicycle trail horse riding trail


This map is a schematic presentation showing generalized locations only.
SR 4
Alhambra
Concord
Golf
Club
Conta
1680
Morello
Rd
Viking
Dr
Willow
Pass
SR 24
Reliez
Valley
Road
Taylor
Blvd
Costa
Blvd
Grayson
Gregory
Monument
Rd
Boyd
Rd
Hookston
Bancroft
Mayhew
Hill
Rd
Patterson
Cleveland
Oak
Park
Blvd
Pleasant
Putnam
Main
Geary
Rd
Treat
Blvd
BART
North
Oak
Road
Ygnacio
Valley
riones
Regional
Park
PROPOSED OPEN SPACE
and
Controlled Development
SYSTEM

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